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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/773,025	02/04/2004	Brad A. Armstrong	F2811	6101
25962 7590 05/19/2009 SLATER & MATSIL, L.L.P. 17950 PRESTON RD, SUITE 1000 DALLAS, TX 75252-5793				
EXAMINER				
BODDIE, WILLIAM				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/773,025

**Applicant(s)**

ARMSTRONG, BRAD A.

**Examiner**

WILLIAM L. BODDIE

**Art Unit**

2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 February 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 9-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SE/US)  
Paper No(s)/Mail Date 4/20/09: 1/31/09
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. In an amendment dated, February 27<sup>th</sup>, 2009 the Applicant amended claims 1, 12 and added new claim 15. Currently claims 9-15 are pending.

#### ***Response to Arguments***

2. Applicant's arguments with respect to claims 9-15 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 9-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang (US 5,298,919) in view of Gaughan et al. (US 5,589,893) and Sharp et al. (US 4,493,219) and further in view of Autry et al. (US 5,724,106).

**With respect to claims 9, 11-12 and 14-15**, Chang discloses an image controller (fig. 1) allowing control of an image generation device capable of creating three-dimensional imagery (col. 1, lines 10-14), the image controller comprising:

a single input member (32 in fig. 2) capable of being manipulated in 5 degrees of freedom by a human hand (ball 32 is capable of being manipulated in all directions of the table upon which the mouse rests (two degrees) and in each rotational direction by virtue of being a rotatable sphere (three degrees));

a circuit board having an upper surface and a lower surface (14 in fig. 4);

a first sensor located on the upper surface of the circuit board (64 in fig. 4), the first sensor indicates manipulation of the single input member (fig. 4);

a secondary input member (22 in fig. 4) capable of being manipulated by the human hand to effect bidirectional movement on at least one axis (X or Y axis);

two additional sensors located on the upper surface of the circuit board (52 and 54 in fig. 5), the two additional sensors indicate the bidirectional movement of the secondary input member (figs. 4-5);

a second proportional sensor indicating rotation of the single input member (66 in fig. 5);

two button sensors located on the upper surface of the circuit board (45-46 in fig. 3);

one button sensor located on the upper surface of the circuit board (47 in fig. 3);

a transmitter allowing communication of signals from the controller to the image generation device, the information is useful to control the three-dimensional imagery (13 in fig. 2).

Chang does not expressly disclose a sixth degree of freedom.

Gaughan discloses, the addition of a sixth degree of freedom to a trackball (42 in fig. 6) by way of movement in the Z direction (down arrow in fig. 6), Z direction movement detected by

a first sensor (44a in fig. 6) located on the upper surface of a circuit board (71 in fig. 6), the first sensor indicates manipulation of the trackball (fig. 6), and

a transmitter allowing wireless communication of signals from a plurality of sensors (54 in fig. 3), wherein the signals are useful to control an imagery device (fig. 1);

Gaughan and Chang are analogous art because they are all from the same field of endeavor namely multi-dimensional input devices.

At the time of the invention it would have been obvious to one of ordinary skill in the art to include the additional switch taught by Gaughan as the first sensor in the device of Chang for the well-known benefit of an additional degree of freedom in the trackball of Chang and thereby additional functionality to the device.

Additionally, at the time of the invention it would have been obvious to one of ordinary skill in the art to replace the cable of Chang with the wireless transmitter of Gaughan for the benefit of untethering the device from the image generation device affording the user more flexibility and decreasing the number of wires necessary (Gaughan; col. 1, lines 34-53).

Neither Chang nor Gaughan expressly disclose that the first sensor is a proportional sensors.

Sharp discloses, a plurality of proportional sensors (fig. 13; col. 2, lines 43-54).

Sharp, Chang and Gaughan are analogous art because they are all from the same field of endeavor namely multi-dimensional input devices.

At the time of the invention it would have been obvious to one of ordinary skill in the art to replace the first sensor of Chang and Gaughan with the proportional sensor of

Sharp for the benefit of an inexpensive and reliable sensor structure that also provides pressure sensitive output (Sharp; col. 1, lines 11-14, 32-38).

Suzuki further discloses controlling a television game (col. 1, line 10), which has traditionally required control of channel switching, speaker volume and on/off functionality.

However, Suzuki, Gaughan and Chang do not expressly disclose that the buttons control channel switching, speaker volume and on/off functionality, a battery compartment or an additional sensor on the lower surface of the circuit board.

Autry discloses, an additional sensor (sensor activated by 913 in fig. 9b) located on the lower surface of the circuit board (note the location of the sensor affected by 913 in fig. 9b); and

volume, channel and On/Off functional buttons (fig. 9a; 914-930; col. 12, lines 1-23); and

a battery compartment adapted to hold a battery for powering the image controller (936-940 in fig. 9b).

Autry, Sharp, Chang and Gaughan are analogous art because they are all from the same field of endeavor namely multi-dimensional input devices.

At the time of the invention it would have been obvious to one of ordinary skill in the art to include the additional sensor of Autry in the device of Sharp, Gaughan and Chang for the benefit of a convenient location for use by an index finger if holding the controller in a natural position (Autry; col. 12, lines 38-42).

Additionally, at the time of the invention it would have been obvious to one of ordinary skill in the art to include the button functionality and battery compartment of Autry in the controller of Sharp, Gaughan and Chang for the benefit of providing a power to the wireless device (Autry; col. 12, lines 32-33) and providing functions that are familiar to the user (Autry; col. 12, lines 3-8).

**With respect to claims 10 and 13**, Chang, Gaughan, Sharp and Autry disclose the image controller of claim 9 (see above).

Chang, when combined with Gaughan, Sharp and Autry, further discloses, wherein said first proportional sensor is of a capacitive type (Sharp; abstract; col. 2, lines 46-48).

### ***Conclusion***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to WILLIAM L. BODDIE whose telephone number is (571)272-0666. The examiner can normally be reached on Monday through Friday, 7:30 - 4:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (571) 272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/William L Boddie/  
Examiner, Art Unit 2629  
5/18/2009

/Sumati Lefkowitz/  
Supervisory Patent Examiner, Art Unit 2629